

Statement of Basis
Huntsman Advanced Materials
Washington County
108-0022

Huntsman Advanced Materials (“Huntsman”) has applied for a renewal of Major Source Operating Permit 108-0022. This proposed Title V Major Source Operating Permit is issued under the provisions of ADEM Admin. Code R. 335-3-16. The above named applicant has requested authorization to perform the work or operate the facility shown on the application and drawings, plans and other documents attached hereto or on file with the Air Division of the Alabama Department of Environmental Management, in accordance with the terms and conditions of this permit.

Background

This facility is a chemical plant which produces epoxy resins. The facility is allowed to operate 8760 hours per year unless otherwise specified. Based on the Title V permit application, this facility is a major source for individual and total hazardous air pollutants (HAPs). It is noted that the total emissions without fugitives would be lower than major source thresholds. However, when taking into account the fugitive emissions, the potential emissions would make the facility a major source of HAPs.

Summary of Changes

- Removed flare visual inspections due to the facility committing to the requirements of §63.11(b) for flares. This regulation requires the flare to be smokeless.
- Changed flare requirements of specialty polymers unit (SPU, Area 19) to match MACT regulations requirements (i.e., part 63 instead of part 60) due to the unit’s applicability to Subpart FFFF.
- Addition of new thermal oxidizer which replaced existing control device. The emission point identifications were modified from 12WBU-EP-10, 12EIM-EP-04, and 19-EP-34 to 12WBU-EP-11, 12EIM-EP-05, and 19-EP-35, respectively.
- Addition of Air Permit No. 108-0022-X005 for Line 7, Area 19. This included the addition of 2 vessels (19-V-1311A and 19-V-1311B) to the Specialty Polymers Unit, Area 19. All other provisions with Line 7 were included within the current Specialty Polymers Unit Permit.

Emission Unit 001: Basic Liquid Resins (BLR) Unit, Area 12

Overview

The main emission points from this unit are the esterification reactor, loading, and packaging silos. The reactor emissions are controlled by the process vent scrubber. The loading and packaging silos are controlled by baghouses.

Emission Standards

Opacity/PM

The state opacity requirement and the process weight curve for general industry would be applicable to each of the particulate emission points associated with this unit (Emission Points 01, 02, 03, 04E, and 04S). Additionally, the facility has taken a more stringent limitation for particulate matter (PM) of 3.0 lb/hr total on the emission points in order to remain a synthetic minor source with respect to PSD.

VOC/HAP

This unit is subject to the requirements of 40 CFR Part 60, Subpart W. When producing basic liquid resins (BLR) as the term is defined in §63.522, the unit shall be operated such that the cumulative emission of HAP from all process vents, storage tanks, and wastewater systems shall not exceed 130 pounds per 1 million pounds of BLR produced (130 lb/MMlb BLR) as stated in §63.523(a). The emissions from the process vents are routed to the process vent scrubber (Emission Point 09) in order to control emissions.

Periodic Monitoring

Opacity/Particulate

Compliance with the opacity and particulate limitations is determined by performance testing. Compliance is indicated by a continuous parameter monitoring system (CPMS) for pressure drop across each of the baghouses. Any significant decrease or increase in the parameter range indicates the need to replace the baghouse. Additionally, visual inspections can be used on the particulate emissions points when the CPMS is down.

VOC/HAP

Compliance with the requirements of 40 CFR Part 63, Subpart W is determined by performance testing. Compliance is indicated by maintaining a continuous parameter monitoring system (CPMS) for scrubber liquid flow rate on the process vent scrubber (emission point 09). The liquid flow rate must remain above the parameter range established during the most recent performance test which shows compliance. The scrubber flow rate is calculated as a daily average.

As stated in §63.523 of 40 CFR Part 63, Subpart W, a leak detection and repair (LDAR) program is required to be implemented for all applicable equipment in HAP service in accordance with the requirements of 40 CFR Part 63, Subpart H.

Emission Unit 002 – Waterborne Resins Unit, Area 12

Overview

The process vents in this unit are the esterification reactor and the charge hopper. The reactor emissions are routed to the thermal oxidizer with baghouse for control. The hopper is routed to a baghouse for control. The facility uses a thermal oxidizer to control blanket gases (nitrogen) and process emissions. During malfunctions, the vent header is diverted from the thermal oxidizer to the emergency flare.

Emission Standards

Opacity/Particulate

The state opacity requirement would be applicable to each of the sources associated with this unit. Each of the particulate sources in this unit is subject to the process weight curve for general process industry. Additionally, Huntsman has taken a more stringent limitation for PM of 2.4 lb/hr on the charge hopper in order to remain a synthetic minor source with respect to PSD.

VOC/HAP

This unit is subject to 40 CFR Part 63, Subpart FFFF. Huntsman has stated that the process vents would contain hydrogen halide and/or halogen HAP. Therefore, as indicated in §63.2465(a) and Table 3 of 40 CFR Part 63, Subpart FFFF, the facility must reduce the emissions from halogenated process vents to greater than 99 percent by weight or to an outlet concentration of less than or equal to 20 ppmv.

Periodic Monitoring

Opacity/Particulate

Compliance with the opacity and particulate limitations is determined by performance testing. Compliance with the opacity and particulate limitations is indicated by performing visual inspections of the baghouse associated with the source.

VOC/HAP

Compliance with the requirements of 40 CFR Part 63, Subpart FFFF is determined by performance testing. Compliance is indicated by a continuous parameter monitoring system (CPMS) on the thermal oxidizer and scrubber in series. The facility is required to maintain the firebox temperature of the thermal oxidizer and the liquid flow rate and pH of the scrubber within the parameter range set during the most recent performance test showing compliance. The pH is required to be monitored in addition to the flow rate due to the additional requirements for halogenated streams as indicated in §63.2465(c).

As stated in §63.2480 and Table 6 of 40 CFR Part 63, Subpart FFFF, a leak detection and repair (LDAR) program equivalent to the requirements of 40 CFR Part 63, Subpart H shall be followed for all applicable equipment in organic HAP service.

Emission Unit 003 – Specialty Polymers Unit, Area 19

Overview

Huntsman has historically committed to classifying the process vents within this unit as Group 1 halogenated batch process vents with respect to the MON. The facility is required to maintain a 99.0% destruction removal efficiency (DRE) or reduce emissions to an outlet concentration of less than 0.45 kg/hr for halogenated HAP. Huntsman has included the flare as an emergency control device during startup, shutdown, and malfunctions of the unit as outlined in the facility's startup, shutdown, and malfunction plan (SSMP). Additionally, the facility has taken a more stringent

limitation for VOC (as total organic carbon or organic HAP) in order to remain a synthetic minor source. The facility is required to maintain a 99.5% DRE or reduce emissions to an outlet concentration of less than or equal to 20 ppmv (measured as TOC or total organic HAP when using concentration).

Emission Standards

Opacity/Particulate

The state opacity requirement would be applicable to each of the sources associated with this unit. Each of the particulate sources in this unit is subject to the process weight curve for general process industry.

VOC/HAP

The thermal oxidizer with tail-gas scrubber, 19-EP-35, is required to maintain a burner temperature, scrubber flow rate, and scrubber pH above minimum levels established during an approved compliance test which demonstrates a 99.5% destruction efficiency for VOC or an outlet concentration of less than or equal to 20 ppmv as TOC or total organic HAP, and a 99% destruction efficiency for halogenated HAP or an outlet concentration of less than or equal to 20 ppmv or less than or equal to 0.45 kg/hr.

In accordance with §63.2485 and Table 7 of Subpart FFFF, the wastewater treatment tanks, 19-V-131, 19-V668, 19-V-1311A, and 19-V-1311B shall reduce HAP concentration within the stream to meet the required mass removal specified in §63.138(f) or to 50 ppmv before discharging wastewater for further processing.

Periodic Monitoring

Opacity/Particulate

Compliance with the opacity and particulate limitations is determined by performance testing. Compliance is indicated by a continuous parameter monitoring system (CPMS) for pressure drop across each of the baghouses. Any significant decrease or increase in the parameter range indicates the need to replace the baghouse. Additionally, visual inspections can be used on the particulate emissions points when the CPMS is down.

VOC/HAP

Compliance with the requirements of 40 CFR Part 63, Subpart FFFF is determined by performance testing. Compliance is indicated by a continuous parameter monitoring system (CPMS) on the thermal oxidizer and scrubber in series. The facility is required to maintain the firebox temperature of the thermal oxidizer and the liquid flow rate and pH of the scrubber within the parameter range set during the most recent performance test showing compliance. The pH is required to be monitored in addition to the flow rate due to the additional requirements for halogenated streams as indicated in §63.2465(c).

As stated in §63.2480 and Table 6 of 40 CFR Part 63, Subpart FFFF, a leak detection and repair (LDAR) program equivalent to the requirements of 40 CFR Part 63, Subpart H shall be followed for all applicable equipment in organic HAP service.

Emission Unit 004 – Electrical Insulating Material (EIM) Production Unit

Overview

Electric Insulating Materials are produced in a batch process. The final product is then packaged or stored on site. The filter charging station emissions are controlled by a baghouse and the reactor emissions are controlled by the process vent scrubber. The facility uses a thermal oxidizer to control blanket gases (nitrogen) and process emissions. During malfunctions, the vent header is diverted from the thermal oxidizer to the emergency flare.

Emission Standards

Opacity/Particulate

The state opacity requirement would be applicable to each of the sources associated with this unit. Each of the particulate sources in this unit is subject to the process weight curve for general process industry. Additionally, Huntsman has taken a more stringent limitation for PM of 0.03 lb/hr on the baghouse in order to remain a synthetic minor source with respect to PSD.

VOC

This unit is subject to 40 CFR Part 63, Subpart FFFF. In order to remain a synthetic minor source with respect to PSD, the VOC emissions rate from the process vent scrubber shall not exceed 1.10 lb/hr based on a 3-hour average and 4.82 tons per year (TPY). The process vent scrubber is routed to the Area 19 Vapor Control System.

Periodic Monitoring

Opacity/Particulate

Compliance with the opacity and particulate limitations is determined by performance testing. Compliance with the opacity and particulate limitations is indicated by performing visual inspections of the baghouse associated with the source.

VOC

Compliance with the requirements of 40 CFR Part 63, Subpart FFFF is determined by performance testing. Compliance is indicated by a continuous parameter monitoring system (CPMS) on the thermal oxidizer and scrubber in series. The facility is required to maintain the firebox temperature of the thermal oxidizer and the liquid flow rate and pH of the scrubber within the parameter range set during the most recent performance test showing compliance. The pH is required to be monitored in addition to the flow rate due to the additional requirements for halogenated streams as indicated in §63.2465(c)

Emission Unit 005 – VOC Storage Tanks

The tanks presented in the following table are storage vessels subject to 40 CFR Part 60, Subpart Kb. The tank documentation (storage material, vapor pressure, etc.) must be maintained for the life of the tanks.

Tank No.	Tank Size (gallons)	Material In Tank	Maximum Vapor Pressure (psia)	Control Technique	Standard
12-V-3600	50,000	ECH	N/A	N/A	335-3-10-.02(9)(b)
19-V-995	500,000	VOC	N/A	N/A	335-3-10-.02(9)(b)
19-V-996	500,000	VOC	N/A	N/A	335-3-10-.02(9)(b)

The tanks presented in the following table are storage vessels subject to 40 CFR Part 63, Subpart FFFF. The control requirement of the tanks is included in the table.

Tank No.	Tank Size (gallons)	Material In Tank	Maximum Vapor Pressure (psia)	Control Technique	Standard
19-V-824	27,345	VOC	N/A	Vent to Area 19 Process Vapor Control System	335-3-11-.06(83)
19-V-823	27,345	VOC	N/A	Vent to Area 19 Process Vapor Control System	335-3-11-.06(83)

The tanks present in the following table are storage vessels subject to anti-PSD emission limitations. The capacity, permitted maximum true vapor pressure of the material stored, and the control requirement of the tanks is included in the table.

Tank No.	Tank Size (gallons)	Material In Tank	Maximum Vapor Pressure (psia)	Control Technique	Standard
19-V-805	17,440	VOC	<3.57	Vent to Area 19 Process Vapor Control System	335-3-14-.01
19-V-807	17,440	VOC	<3.57	Vent to Area 19 Process Vapor Control System	335-3-14-.01
19-V-808	17,440	VOC	<3.57	Vent to Area 19 Process Vapor Control System	335-3-14-.01
19-V-809	17,440	VOC	<3.57	Vent to Area 19 Process Vapor Control System	335-3-14-.01
19-V-812	17,440	VOC	<3.57	Vent to Area 19 Process Vapor Control System	335-3-14-.01
19-V-813	17,440	VOC	<3.57	Vent to Area 19 Process Vapor Control System	335-3-14-.01
19-V-814	17,440	VOC	<3.57	Vent to Area 19 Process Vapor Control System	335-3-14-.01
19-V-815	17,440	VOC	<3.57	Vent to Area 19 Process Vapor Control System	335-3-14-.01
19-V-816	17,440	VOC	<3.57	Vent to Area 19 Process Vapor Control System	335-3-14-.01
19-V-817	17,440	VOC	<3.57	Vent to Area 19 Process Vapor Control System	335-3-14-.01
19-V-829	17,440	VOC	<3.57	Vent to Area 19 Process Vapor Control System	335-3-14-.01
19-V-828	17,500	VOC	<1.79	Vent to Area 19 Process Vapor Control System	335-3-14-.01
19-V-831	17,500	VOC	<1.79	Vent to Area 19 Process Vapor Control System	335-3-14-.01
19-V-833	17,500	VOC	<1.79	Vent to Area 19 Process Vapor Control System	335-3-14-.01
19-V-830	17,500	DY-025	N/A	Vent to Area 19 Process Vapor Control System	335-3-14-.01
19-V-832	17,500	VOC	<0.963	Vent to Area 19 Process Vapor Control System	335-3-14-.01

19-V-811	17,500	VOC	N/A	Vent to Area 19 Process Vapor Control System	335-3-14-.01
19-V-834	17,440	VOC	<0.963	Vent to Area 19 Process Vapor Control System	335-3-14-.01
19-V-826	15,000	VOC	<0.11	Vent to Area 19 Process Vapor Control System	335-3-14-.01
19-V-827	15,000	VOC	<0.11	Vent to Area 19 Process Vapor Control System	335-3-14-.01
19-V-818	14,902	VOC	<5.50	Vent to Area 19 Process Vapor Control System	335-3-14-.01
19-V-819	15,000	VOC	<5.50	Vent to Area 19 Process Vapor Control System	335-3-14-.01
19-V-820	15,000	VOC	<5.50	Vent to Area 19 Process Vapor Control System	335-3-14-.01
19-V-821	15,000	VOC	<5.50	Vent to Area 19 Process Vapor Control System	335-3-14-.01
19-V-822	15,000	VOC	<5.50	Vent to Area 19 Process Vapor Control System	335-3-14-.01
19-V-810	17,400	O-Cresol, Isophorone Diamine, and Polyaminoamide	N/A	Vent to Area 19 Process Vapor Control System	335-3-14-.01
19-V-800	17,500	Molten MDA	N/A	Vent to Area 19 Process Vapor Control System	335-3-14-.01
19-V-837	10,571	Allyl Chloride	N/A	Vent to Area 19 Process Vapor Control System	335-3-14-.01

Emission Unit 006 – Miscellaneous Sources

Overview

The description, date installed, and the operating capacity of the emergency generators utilized by the facility are listed in the table below. All engines are utilized as emergency use only. All engines are diesel fired compression ignition reciprocating internal combustion engines (RICE) and are subject to 40 CFR Part 63, Subpart ZZZZ. The Data Center Emergency Generator is subject to the requirements of 40 CFR Part 60, Subpart IIII and compliance with this subpart will constitute compliance with Subpart ZZZZ.

Generator ID	Generator Description	Installation Date	Operating Capacity (HP)
19-EM-GEN-01	Area 19 Emergency Generator	1989	1,204
12-EM-GEN-02	Data Center Emergency Generator	2007	364

Emission Standards

Opacity/Particulate

All emergency engines associated with this facility are subject to the state opacity requirement.

40 CFR Part 60, Subpart IIII

The Data Center Emergency Generator (12-EM-GEN-02) is subject to the requirements of 40 CFR Part 60, Subpart IIII. In order for the Data Center Emergency Generator (12-EM-GEN-02) to

remain classified as emergency, the engine would be required to operate according to the requirements of 40 CFR 60.4211(f)(1)-(3). This subpart requires the facility to comply with the emission standards listed in §60.4205(b).

Non-methane Hydrocarbon + Nitrogen Oxides (NMHC + NO_x)

As referenced in §60.4205(b), §89.112(a) states the sum of non-methane hydrocarbon (NMHC) and nitrogen oxide (NO_x) emission rate shall not exceed 4.0 g/KW-hr.

Carbon Monoxide (CO)

As referenced in §60.4205(b), §89.112(a) states the CO emission rate shall not exceed 3.5 g/KW-hr.

PM

As referenced in §60.4205(b), §89.112(a) states the PM emission rate shall not exceed 0.20 g/KW-hr.

HAPs

As stated in §63.6585, any facility that owns or operates a stationary RICE at a major or area source of HAP emissions is subject to 40 CFR Part 63, Subpart ZZZZ. However, as stated in §63.6600(c), any facility that owns or operates a stationary emergency RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions is not required to meet the emission limitations in Table 1a, 2a, 2c, and 2d or the operating limitations in Tables 1b and 2b or Subpart ZZZZ. Therefore, Area 19 Emergency Generator (19-EM-GEN-01) has no emission limitations or operating limitations for 40 CFR Part 63, Subpart ZZZZ. However, for the Area 19 Emergency Generator (19-EM-GEN-01) to remain classified as an emergency engine, the engine shall only operate as specified in §63.6640(f).

Periodic Monitoring

Opacity/Particulate

Since all of the engines are classified as emergency, no additional monitoring requirements for the opacity standard are required.

40 CFR Part 60, Subpart IIII

To indicate compliance with the emission limitations for Data Center Emergency Generator (12-EM-GEN-02), the facility shall operate and maintain the stationary CI internal combustion engine according to the manufacturer's emission-related written instructions, change only those emission-related settings that are permitted by the manufacturer, and meet the requirements of 40 CFR Parts 89, 94 and/or 1068, as applicable.

The facility shall install a non-resettable hour meter on the Data Center Emergency Generator (12-EM-GEN-02) to record emergency and non-emergency operation hours. The facility shall also maintain records of any maintenance performed on Data Center Emergency Generator (12-EM-GEN-02).

Compliance Assurance Monitoring (CAM)

This facility is subject to the provisions of 40 CFR Part 64, Compliance Assurance Monitoring (CAM). Since the potential pre-control device PM emissions from the following baghouses: 12BLR-EP-01, 12BLR-EP-02, 12BLR-EP-03, 12BLR-EP-04S, 12BLR-EP-04E, 19-EP-01, 19-EP-05, 19-EP-18, 19-EP-20, 19-EP-27, and 19-EP-28 are greater than the major source threshold for PM (100 TPY), the baghouses are subject to the CAM provisions, and monitoring is required. The potential post-control device emissions from the baghouses are less than the major source threshold for PM (100 TPY) and are thus classified as “other pollutant-specific emission units” per 40 CFR 64.5(b).

Recommendation

The renewal Major Source Operating Permit (108-0022) shall be issued with the requirements above pending resolution of any comments received during a 30-day public comment period and a 45-day EPA review.